

Appendix A
Interim Drilling Policy

APPENDIX A

INTERIM DRILLING POLICY

DEVELOPMENT AUTHORIZED CONCURRENT WITH EIS PREPARATION FOR THE ATLANTIC RIM COAL BED METHANE PROJECT

During the preparation of the Atlantic Rim Coal Bed Methane Environmental Impact Statement (EIS), the Bureau of Land Management's (BLM) authority to allow drilling on the federal mineral estate is limited. The Council on Environmental Quality (CEQ) Regulations and 40 CFR 1506.1, *limitations on actions during NEPA process* to comply with the National Environmental Policy Act (NEPA) provide the following regarding limitation on concurrent authorizations:

Section 1506.1

- (a) Until an agency issues a record of decision as provided in para. 1505.2 (except as provided in paragraph (c) of this section), no action concerning the proposal shall be taken which would:*
 - (1) Have an adverse environmental impact; or*
 - (2) Limit the choice of reasonable alternatives.*
- (b) If any agency is considering an application from a non-federal entity, and is aware that the applicant is about to take an action within the agency's jurisdiction that would meet either of the criteria in paragraph (a) of this section, then the agency shall promptly notify the applicant that the agency will take appropriate action to insure that the objectives and procedures of NEPA are achieved.*
- (c) While work on a required program environmental impact statement is in progress and the action is not covered by an existing program statement, agencies shall not undertake in the interim any major federal action covered by the program which may significantly affect the quality of the human environment unless such action:*
 - (1) Is justified independently of the program;*
 - (2) Is itself accompanied by an adequate environmental impact statement; and*
 - (3) Will not prejudice the ultimate decision on the program. Interim action prejudices the ultimate decision on the program when it tends to determine subsequent development or limit alternatives.*
- (d) This section does not preclude development by applicants of plans or designs or performance of other work necessary to support an application for federal, state or local permits or assistance....*

APPENDIX A. INTERIM DRILLING POLICY

The above regulations and the following criteria and conditions will be used by the BLM to determine new exploratory activities allowed on federal surface and/or minerals during preparation of the EIS. They also establish conditions under which these activities will be approved. The intent of these criteria and conditions are to keep all activity within the scope of existing analysis and at a reasonable level, to allow limited drilling activity for acquisition of additional data necessary for completion of the EIS, and to prevent unnecessary hardship to leaseholders. These criteria may be modified by the BLM authorized officer (AO) if any of the allowed activities are viewed as having a potentially significant effect on the environment or prejudice the ultimate decision on the drilling program for the EIS as outlined in the CEQ regulations quoted above.

ACTIVITIES ALLOWED ON FEDERAL LANDS AND MINERALS DURING EIS PREPARATION

1. A maximum of 200 coal bed methane wells will be allowed within the project area, for research and exploratory purposes, during the interim period in which the EIS is prepared. Wells will only be allowed in the nine pods the operators have proposed and a maximum of only 24 coal bed methane wells will be allowed within any pod, regardless of multiple zones to be evaluated (see map).
2. Activities within individual pods will be authorized by BLM. For any pod location which overlaps the boundary of a sensitive resource area for sage-grouse, mountain plover, raptors, big game migration corridors, and sensitive plants, appropriate stipulations and mitigation will be applied to protect any sensitive resources present (see Term Definitions below). Some sensitive resources such as high density paleontological or cultural resources sites, are not mapped and will also be handled on a pod basis.
3. Existing coal bed methane wells (two wells re-completed as coal bed methane producers in the Cow Creek Unit by Double Eagle and one new well completed by Petroleum Development Corporation (PEDCO), to the east of this unit) will count toward the above well limits. As Federal 1691 #10-8 has been plugged and abandoned, it will not count toward the above well limit. In addition, the six coal bed methane wells originally permitted by North Finn LLC and drilled in Section 5, T. 17 N., R. 90 W., and the well located in Section 36 of T. 15 N., R. 91 W., will not count toward the allowed well number, as long as they are not included as part of any proposed pod. In addition, required injection wells and monitoring wells will not count toward the well limit.
4. Any modifications proposed to the approved pods (i.e. changing pod locations, drilling wells outside of the current pod locations, or increasing the total number of wells allowed during interim drilling), will only be approved if geologic, hydrologic, or reservoir characteristics support a change. These changes will be allowed after review by, and concurrence of, the Reservoir Management Group (RMG) and authorization by the BLM, Rawlins Field Office (RFO). Additional federal drainage protection wells may be required.
5. During preparation of the EIS, coal bed methane wells and associated roads and pipelines on any private surface/private mineral where the operator has, or has obtained legal access (i.e., county roads, approved BLM Right-of-Way (ROW) grant

APPENDIX A. INTERIM DRILLING POLICY

or private access road) prior to approval of the interim drilling plan, may be developed as deemed appropriate by the operator/lessee. However, these wells will count toward the total number of wells allowed to be drilled under this interim drilling policy.

THE FOLLOWING CRITERIA AND CONDITIONS APPLY TO INTERIM DRILLING OPERATIONS

1. A detailed Plan of Development/Surface Use Plan (POD/SUP) and Master Drilling Plan for each individual pod, using guidance provided by the BLM RFO, will be submitted and approved prior to surface disturbing activities.
2. The operator(s) agree to supply the geologic, coal, and water data information discussed in attachment 1 of this document.
3. Prior to initiating interim drilling, an environmental assessment (EA), including a detailed Water Management Plan will be prepared and approved for each individual pod. Because of the current BLM workload, and in order to expedite the completion of the EAs, it is recommended that these documents be prepared by a third-party contractor.
4. All pod EA's will be submitted to the BLM in PDF format and each document will be placed on the BLM Wyoming web page. A 30-day public review of each document will occur from the date the document is placed on the site. BLM will be responsible for writing the decision record for each EA.
5. A 1/4 mile buffer is required between surface disturbing activities and the Overland Trail.
6. Block surveys for cultural resources will be required for each pod.
7. No interim drilling will be allowed in the Sand Hills Area of Critical Environmental Concern as described in the Great Divide Resource Management Plan Record of Decision (USDI-BLM 1990).
8. The Great Divide RMP states the BLM will include intensive land-use practices to mitigate salt and sediment loading caused by surface disturbing activities within the Muddy Creek watershed. The Muddy Creek Coordinated Resource Management (CRM) group was established as an advisory group to address this issue. Because this area overlaps with the Muddy Creek CRM effort, and since road use contributes the most in increasing the amount of sediment in the Muddy Creek drainage, the POD/SUP will be reviewed by the Muddy Creek CRM Road Committee and recommendations of the group will be considered by BLM. Changes to the POD/SUP will be made prior to initiating work on the pod EA.
9. Surface discharge as a method of disposal for produced coal bed methane waters will be considered for each individual pod during interim drilling activities within the Great Divide Basin. This is subject to the approval of the Water Management Plan and upon obtaining all required federal, state and local permits.

APPENDIX A. INTERIM DRILLING POLICY

10. Prior to completion of the EIS, water produced from coal bed methane wells located in the Colorado River Basin will be disposed of by re-injection. The only exception to this would be waters produced from the Double Eagle's coal bed methane existing and proposed wells located in the Cow Creek Pod (Pod #6). Double Eagle has applied to the Wyoming Department of Environmental Quality (WDEQ) for a National Pollutant Discharge Elimination System (NPDES) permit for their two existing wells and four wells permitted recently by BLM. Should Double Eagle receive their state permit, they will be allowed to surface discharge from these six wells. Prior to any additional drilling of CBM wells by Double Eagle in Pod #6, an environmental assessment, including a Water Management Plan, will be prepared and submitted to BLM which will examine the environmental impacts from these wells. Double Eagle will be allowed to dispose of produced CBM waters to the surface only after completion of the environmental analysis and a determination is made that the additional surface discharge will cause no significant impact to the environment.
11. No drilling activities will be allowed in prairie dog towns during interim operations. However, drilling will be allowed in each individual pod containing prairie dog towns upon the completion of black-footed ferrets survey using methods approved by the United States Fish and Wildlife Service. These surveys will clear the pod for a one year period. The operators also have the option of completing surveys in the whole EIS area which would clear the area for the life of the project.
12. In the event a black-footed ferret or its sign is found, the BLM Authorized Officer shall stop all action on the application in hand, and/or action on any application that may directly, indirectly, or cumulatively affect the colony/complex, and initiate Section 7 review with the United States Fish & Wildlife Service (USFWS). No project related activities will be allowed to proceed until the USFWS issues their biological opinion. The USFWS biological opinion will specify when and under what conditions and/or prudent measures the action could proceed or whether the action will be allowed to proceed at all.
13. No drilling or disturbance will be allowed in those areas determined to be critical winter habitat for sage-grouse.
14. No drilling or disturbance will be allowed in areas where any two or more big game (elk, deer, or antelope) crucial winter ranges overlap.
15. The operators will be required to submit a drilling schedule as part of the Master Drilling Plan. This schedule will be reviewed, and approved by BLM, to ensure that activities are limited within proven big game migration corridors at critical use times during the year.
16. Pipelines, power lines, waterlines, fiber optic lines will be buried and, where possible, will follow the road rights-of-way.
17. Fish passage structures will be installed for roads which cross drainages with fisheries concerns as identified by BLM.

APPENDIX A. INTERIM DRILLING POLICY

TERM DEFINITIONS

SENSITIVE RESOURCE AREAS are defined as those areas containing stabilized sand dunes, sensitive plant areas, raptor nesting concentration areas, prairie dog towns, two-mile buffer around sage-grouse leks, mountain plover aggregation areas or potential habitat, big game migration corridors and crucial big game winter ranges, and areas with high density cultural or paleontological resource sites. Field inspections by the BLM will be conducted to verify presence of these resource values and potential impacts prior to considering authorization of any proposed development activity on federal surface and/or minerals.

WILL BE AUTHORIZED means BLM will authorize the action if, following the environmental review of the Application for Permit to Drill (APD) or ROW application, sensitive resource areas are protected with appropriate stipulations or mitigation and the criteria established under CEQ regulation 40 CFR 1506.1 have been met. An EA will be completed for each individual pod prior to authorizing the proposal. Consultation and Coordination with the Wyoming Game and Fish Department and the U.S. Fish and Wildlife Service will occur when applicable for proposed activity within sensitive resource areas. The pod EA will identify the most environmentally acceptable access route, well site, and pipeline location. Mitigation measures developed from nearby project EISs and EAs for protection of resource values may be considered in the assessment. Any action proposed must be in conformance with the Great Divide Resource Management Plan (RMP) and mineral lease terms and conditions.

A coal bed methane pod may consist of two or more production wells, injection wells, access roads, product pipelines, water pipelines, power lines and other ancillary facilities designed specifically to assess the development potential of the play.

REFERENCES CITED

USDI-BLM 1990. *Great Divide Resource Area Record of Decision and Approved Resource Management Plan*. Rawlins, Wyoming: U.S. Department of the Interior, Bureau of Land Management, Rawlins District Office, Great Divide Resource Area. 74 pp.

APPENDIX A. INTERIM DRILLING POLICY

ATTACHMENT A-1

DATA SUBMISSION REQUIREMENTS

A. GEOLOGIC AND COAL INFORMATION REQUIRED TO BE SUBMITTED BY OPERATORS DURING INTERIM DRILLING ACTIVITIES

The geologic and coal information needs identified below are those that the RMG, in consultation with the United States Geologic Survey, has determined are needed based on their experience with coal bed methane development in the Powder River Basin. The information will be used to define the potential gas resource and provide valuable data for the NEPA assessment including the determination of future development potential.

1. Operators will provide copies of all geologic information obtained to the RFO and the RMG as required under 43 CFR 3162.4.
2. The suite of logs required to evaluate coalbeds in the project area are high resolution gamma ray, resistivity, density, and neutron logs. The full suite will be required during this phase but may be reviewed for changes during any later drilling phase.
3. Detailed geologic and coal information will be required and obtained for a minimum of one well within each of the nine pods. Information required includes; coal cores, fluid level, and production analysis. From this data information can be obtained on coal rank, adsorption and desorption gas content, core density, specific gravity, orientation of cleats and joints, initial saturations, coal permeability, and desorption pressure.
4. Initial reservoir pressure for each pod drilled.
5. Agree to standard stratigraphic nomenclature for all operators to use in preparing reports to the BLM and Wyoming Oil and Gas Conservation Commission.
6. Obtain an initial reservoir pressure for each coal bed in three of the pods.
7. Obtain reservoir pressure at the end of one year and two years, for each coal bed in three of the pods.

B. WATER ASSESSMENT/MONITORING DATA NEEDS

Recognizing that surface and ground water resources can be affected by large coal bed methane drilling projects, the following data submission requirements will be necessary to complete the assessment of impacts and develop baseline water conditions. Also water monitoring data has been found to be vital when reviewing drainage situations.

1. The operator(s) will obtain aquifer hydraulic baseline data for all pods in the initial exploration phase. This will include hydraulic conductivity and storativity derived from a multiple well pumping test conducted at each pod. This information could be used to provide data for the NEPA document and to assess monitoring needs for full field development.

APPENDIX A. INTERIM DRILLING POLICY

2. Identify all domestic/industrial wells in the area and make a baseline and annual measurement of each.
3. Prepare a well mitigation agreement for existing wells and offer it to all groundwater appropriators in the vicinity.
4. Monitoring wells need to be installed both in an updip and downdip direction, completed in coal and overburden, from the pods selected. Details of this requirement will be done in coordination with the RFO hydrologist.
5. Measure initial static water levels in all production wells.
6. Collect water quality analyses for each pod.
7. Each well must have a continuous flow meter installed to measure water production rates for the duration of the project. All water production data will be furnished to the Bureau.
8. Baseline surface water quality should be collected in each stream or receiving water that will collect or transport discharge water. The analysis will include all BLM category I, II, and III constituents.
9. The operator will provide to BLM a geologic map of the area/watershed where the produced water is to be re-injected. This should include surficial and bedrock geology, with a clear definition of recharge zones of the receiving formation/unit. The pre-injection water levels and water quality should be monitored and that data provided to BLM. The receiving aquifer should be pump tested and aquifer hydraulics reported to BLM. The reported parameters will include hydraulic conductivity, water levels and storativity for each receiving aquifer.

C. ADDITIONAL WATER MONITORING REQUIREMENTS.

The following requirements were added to the interim drilling requirements effective January 14, 2002. Where there are conflicting monitoring requirements with those described in part B of this attachment, those listed below will supersede the previous requirements.

1. One pod in each distinct geologic setting will be selected for monitoring reservoir pressures with the required monitoring well program. The location of wells used in monitoring reservoir pressures will be determined through discussion with, and approval by, the RMG and the RFO.
2. One monitoring well will be drilled in each of the three selected pods which will allow all of the necessary data to be developed and available.
3. Take pressure reading from these wells every other month for the first year and then quarterly, or on a time frame as determined by the Resource Management Group. Data collected in each interval of the multiple completion groundwater monitoring well shall include an initial four-hour, formation-pressure measurement for each perforated interval. Subsequent, periodic pressure measurements for each perforated interval will be of at least a two-hour duration unless the interval has been

APPENDIX A. INTERIM DRILLING POLICY

open for more than two hours or if pressure buildup or decline suggest a different time interval.

4. Use of one of the proposed production wells to monitor reservoir pressure of the coal by obtaining initial pressure and annual shut-in bottom hole pressures.

This interim drilling policy is current as of January 14, 2002. The activities, criteria, and conditions under which interim drilling are allowed are subject to change.